REMARKS

The Examiner is thanked for the performance of a thorough search. Claims 1-21, 23-26, and 28-32 are pending in this application. The amendments to the claims do not add any new matter to this application. Furthermore, the amendments to the claims were made to improve the readability and clarity of the claims and not for any reason related to patentability. All issues raised in the Office Action mailed June 18, 2008 are addressed hereinafter.

I. ISSUES NOT RELATING TO PRIOR ART

A. CLAIM OBJECTIONS

The Office Action states that claims 23-24 and 28 are objected to because of informalities. (Office Action, page 2)

Applicants believe that the objections are fully addressed by amended claims 23-24 and 28.

Reconsideration and withdrawal of the objection is respectfully requested.

B. CLAIM REJECTIONS -- U.S.C. § 112, SECOND PARAGRAPH

The Office Action rejected claims 9, 23 and 30 under 35 U.S.C. § 112, second paragraph. (Office Action, page 3)

Applicants believe that the rejection is fully addressed by amended claims 9, 23 and 30.

Reconsideration and withdrawal of the rejection is respectfully requested.

C. CLAIM REJECTIONS -- U.S.C. § 101

The Office Action rejected claims 9, 23 and 30 under 35 U.S.C. § 101.

Applicants believe that the rejection is fully addressed by amended claims 9, 23 and 30. (Office Action, page 3)

Reconsideration and withdrawal of the rejection is respectfully requested.

II. ISSUES RELATING TO PRIOR ART

A. CLAIMS -- 35 U.S.C. § 102(e): HO

Claims 1-2, 6-11 and 15-18 stand rejected under 35 U.S.C. § 102(e) as allegedly unpatentable over Ho Pub. No. US 2002/0136223 A1 (hereinafter "Ho"). (Office Action, page 4) The rejection is respectfully traversed.

CLAIM 1

Present claim 1 recites:

1. A method of forwarding a tunneled packet having a header identifying a tunnel end point and a payload, in a data communications network, comprising the steps performed at a forwarding node of:

for a forwarding node and a tunnel end point both in the same data communication network and both transmitting tunneled packets using the same data communication protocol:

recognizing a tunneled packet comprising an address directly identifying a neighbor node to the forwarding node as the tunnel end point;

removing the header and

forwarding the payload to the neighbor node.

Support for the amendment to claim 1 is provided in paragraphs [0046]-[0048] of the specification.

Claim 1 recites one or more features that are not taught or suggested in Ho. For example, Ho does not describe "**for a forwarding node and a tunnel end point both in the same data communication network and both transmitting tunneled packets using the same data communication protocol: recognizing a tunneled packet comprising an address directly identifying a neighbor node to the forwarding node as the tunnel end point, removing the header, and forwarding the payload to the neighbor node.**"

Ho describes a method and system for interfacing an MPLS based network to an ATM network, and provides a mechanism for carrying ATM data over a MPLS network. (Ho: paragraph [0006]) In Ho, upon leaving the ATM network, a data packet, originated in the ATM network, arrives at the MPLS node, called an ingress "ATM aware Label Switching Router (LSR)." The ingress "ATM aware LSR" processes the received data packet, and forwards the data packet via the MPLS network to an egress "ATM aware LSR," which then transmits the data packet to the destination in the ATM network. (Ho: paragraph [0026]) Both the ingress "ATM aware LSR" and the egress "ATM aware LSR" routers are edge routers of the MPLS network. Specifically, the ingress "ATM aware LSR" is located at the entry edge of the MPLS network and is responsible for providing an interface from the ATM network to the MPLS network, whereas the egress "ATM aware LSR" is located at the exit edge of the MPLS network and is responsible for providing an interface from the MPLS network to the ATM network.

However, the ATM interface, which transmits the data to the ingress "ATM aware LSR," and the ingress "ATM aware LSR" are not **"a forwarding node and a tunnel end point both in the same data communication network, and both transmitting tunneled packets, using the same data communication protocol,"** as claimed. The ATM interface transmits the data to the ingress "ATM aware LSR" using the Asynchronous Transfer Mode protocol, whereas the ingress "ATM aware LSR" uses the Private Network-Network Interface (PNNI) and MPLS protocol. The ATM protocol is not **"the same communication protocol"** as PNNI, and is not **"the same communication protocol"** as MPLS. Further, the ATM interface does not "recognize a tunneled packet comprising **an address directly identifying the neighbor node to the forwarding node as the tunnel end point,"** and does not "**remove the header,"** as claimed, because the ATM interface does not recognize its neighbor node as the tunnel end point, and because the ATM interface does not remove any headers.

Further, the ingress "ATM aware LSR" and the egress "ATM aware LSR" are not **"a forwarding node and a tunnel end point,"** where the "**forwarding node recognizes a**

tunneled packet comprising an address directly identifying the neighbor node to the forwarding node as the tunnel end point," and the ingress "ATM aware LSR" does not **"remove the header,"** as claimed. Ho's ingress "ATM aware LSR" knows that it has to eventually transmit the data packet to the egress "ATM aware LSR" as the tunnel end point; however, the ingress "ATM aware LSR" does not do that by **"removing the header,"** as claimed. Instead, Ho's ingress "ATM aware LSR" executes a number of PNNI-protocol operations, determines a "Constraint-based Routed Label Switched Path" (CR-LSP) for the received data packet, and maps the data traffic toward the egress "ATM aware LSR" into the CR-LSP. (Ho: paragraphs [0027]-[0028]) To carry the ATM traffic via the CR-LSP, the ingress "ATM aware LSR" encapsulates the content of the ATM protocol compatible data and adds an MPLS header to the new packet. (Ho: paragraph [0037]). Thus, an IP address of the destination node in the ATM network becomes a part of the payload of the MPLS packet. (Ho: paragraphs [0031] and [0038]) Thus, Ho's ingress "ATM aware LSR" does not "remove any header," and does not directly "forward the payload to the tunnel end point."

Moreover, "Ho's ingress "ATM aware LSR" and other MPLS nodes are not **"a forwarding node and a tunnel end point"** where the "**forwarding node recognizes a tunneled packet comprising an address directly identifying the neighbor node to the forwarding node as the tunnel end point, removes the header,"** as claimed. In Ho, the labels of a MPLS labeled packet are arranged into a label stack. The topmost label corresponds to the CR-LSP that is used to transport the MPLS packet between the ingress "ATM aware LSR" and the egress "ATM aware LSR." (Ho: paragraph [0032]) The label beneath the top of the label stack corresponds to the ATM interface. (Ho: paragraph [0032]) By the time the MPLS labeled packet arrives on the CR-LSP at the egress "ATM aware LSR," which is the endpoint of the CR-LSP, penultimate hop popping should have taken place, and the label corresponding to the egress "ATM aware LSR" should have been removed. (Ho: paragraph [0034])

However, that penultimate removal pertains to the removal of a label, not **"an address directly identifying the neighbor node."** Removal of the labels in MPLS protocol does not involve "recognizing a tunneled packet comprising **an address directly identifying the neighbor node to the forwarding node as the tunnel end point;** removing the header and forwarding the payload to the neighbor node," as claimed. Instead, the penultimate hop popping exposes the next label in the label stack. (Ho: paragraph [0034]) The egress "ATM aware LSR" uses that label to forward the labeled packet to the correct the ATM interface, not "**the tunnel end point,'** as claimed.

Moreover, the egress "ATM aware LSR" and the ATM interface are not "a **forwarding node and a tunnel point both in the same data communication network and both transmitting tunneled packets using the same data communication protocol,"** as claimed. The ingress "ATM aware LSR" uses the Private Network-Network Interface (PNNI) and MPLS protocol, whereas the ATM interface uses the Asynchronous Transfer Mode protocol. PNNI protocol is not **"the same communication protocol"** as ATM protocol, and MPLS is not **"the same communication protocol"** as ATM.

In sharp contrast to Ho, according to claim 1, the forwarding node and the tunneled end point both are in the same data communication network and both transmit tunneled packets using the same data communication protocol. Further, according to claim 1, the forwarding node recognizes a tunneled packet comprising an address directly identifying the neighbor node to the forwarding node as the tunnel end point, removes the header and forwards the payload to the neighbor node, which is the tunnel end point. This is not taught or suggested in Ho.

Therefore, claim 1 recites one or more features that are not described in Ho. Thus, reconsideration and withdrawal of the rejection is respectfully requested.

CLAIMS 10 AND 18

Claims 10 and 18 recite features similar to those in claim 1. Therefore, reconsideration and withdrawal of the rejection is respectfully requested for the same reasons described for claim 1.

B. CLAIMS -- 35 U.S.C. § 103(a): HO, AKAHANE

Claims 3-5, 12-14, 19-21, 23-26 and 28 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Ho Pub. No. US 2003/0053414 A1 (hereinafter "Akahane). (Office Action, page 6) The rejection is respectfully traversed.

CLAIMS 19, 23-24 AND 28

Claims 19, 23-24 and 28 recite features similar to those in claim 1, and Ho does not teach or suggest the whole subject matter of claim 1. Further, Akahane does not cure the deficiencies of claim 1. Therefore, reconsideration and withdrawal of the rejection is respectfully requested for the same reasons described for claim 1.

C. CLAIMS -- 35 U.S.C. § 103(a): CHU, CANNING

Claims 29-32 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Chu Pub. No. US 2004/0151181 A1 (hereinafter "Chu") in view of Canning US Patent No. 7,349,427 B1 (hereafter "Canning"). (Office Action, page 9) The rejection is respectfully traversed.

CLAIM 29

Claim 29 recites:

> 29. A method of constructing a spanning tree from a first node in a data communications network having as components nodes and links, around a component, comprising the steps of:
>
> **computing the spanning tree, rooted at the first node, of available nodes which excludes nodes reachable by traversing the component, and assigning to an available node a positive of a cost of reaching the available node from the first node;**

assigning to an available node a negative of a cost of reaching the first node from the-available node assuming that an unavailable component is available; and

re-computing the spanning tree taking into account the positive of the cost of reaching the available node from the first node and the negative of the cost of reaching the first node from the available node.

Support for the amendment to claim 1 is provided in paragraphs [0057]-[0061] of the specification.

Claim 1 recites one or more features that are not taught or suggested in Chu and Canning, individually or in combination. For example, Chu and Canning do not describe "**computing the spanning tree, rooted at the first node, of available nodes which excludes nodes reachable by traversing the component, and assigning to an available node a positive of a cost of reaching the available node from the first node; assigning to an available node a negative of a cost of reaching the first node from the-available node assuming that an unavailable component is available; and re-computing the spanning tree taking into account the negative of a cost of reaching the first node from the available node.**"

Chu does not "assign to an available node a negative of a cost of reaching the first node from the available node," as claimed. (Chu, paragraph 37) Further, Chu does not "assign to an available node a negative of a cost of reaching the first node from the available node assuming that an unavailable component is available," as claimed. (Chu, paragraph 37) Therefore, Chu cannot "re-compute the spanning tree taking into account the positive of the cost of reaching the available node from the first node and the negative of the cost of reaching the first node from the available node," as claimed.

Canning's negative of the cost is not related to "assigning to an available node a negative of a cost of reaching the first node from the-available node assuming that an unavailable component is available," as claimed. Canning discusses "the encapsulation cost for each

heterogeneous node in the network," where the "negative value" is chosen, not "computed, as claimed. (Canning: column 6, line 5-7) Canning states:

> The encapsulation cost may be equivalent to the do-encapsulation cost between said first protocol set and said second protocol set alternatively, the encapsulation cost may differ from the de-encapsulation cost. It is also possible to provide set the encapsulation cost to a negative value. The encapsulation cost may be varied according to network conditions. Advantageously, by appropriately setting the encapsulation cost, including providing a negative encapsulation cost, the use of tunnelling when determining an optimum path can be controlled. It is possible to set the encapsulation cost to automatically perform tunnelling without incurring the delay of fully calculating a route to the destination node. This is advantageous if a packet can avoid congestion, for example, if its native protocol is subject to a lot of congestion, by tunnelling in which case by choosing an appropriate value of T, for example, by setting T to a negative value, it is possible to increase the likelihood of tunnelling over the network.
> (Canning: column 5, lines 57+; column 6, lines 1-7)

Therefore, Canning does not "assign to an available node a negative of a cost of reaching the first node from the available node, wherein the negative of the cost of reaching the first node from the available node is computed assuming that an unavailable component is available," as claimed. Further, Canning does not "assign to an available node a negative of a cost of reaching the first node from the available node assuming that an unavailable component is available," as claimed. Therefore, Canning cannot "re-compute the spanning tree taking into account the positive of the cost of reaching the available node from the first node and the negative of the cost of reaching the first node from the available node," as claimed.

In sharp contrast to Chu and Canning, according to claim 29, the spanning tree is re-computed taking into account the positive of the cost of reaching the available node from the first

node and the negative of the cost of reaching the first node from the available node, wherein the negative of the cost of reaching the first node from the available node is assigned assuming that an unavailable component is available. This is not taught or suggested in Chu and Canning.

Therefore, Chu and Canning, individually or in combination, do not teach or suggest the whole subject matter recited in claim 29.

Thus, reconsideration and withdrawal of the rejection is respectfully requested.

CLAIMS 30-32

Claims 30-32 recite features similar to those in claim 29. Therefore, reconsideration and withdrawal of the rejection is respectfully requested for the same reasons described for claim 29.

DEPENDENT CLAIMS

The claims that are not discussed above depend directly or indirectly on the claims that have been discussed. Therefore, those claims are patentable for the reasons given above. In addition, each of the dependent claims separately introduces features that independently render the claim patentable. However, due to the fundamental differences already identified, and to expedite positive resolution of the examination, separate arguments are not provided for each of the dependent claims at this time.

III. CONCLUSIONS

It is respectfully submitted that all of the pending claims are in condition for allowance and the issuance of a notice of allowance is respectfully requested.

If any applicable fee is missing or insufficient, the Commissioner is authorized throughout the pendency of this application to charge any applicable fee to our Deposit Account No. 50-1302.

The Examiner is invited to contact the undersigned by telephone if the Examiner believes that such contact would be helpful in furthering the prosecution of this application.

Respectfully submitted,

HICKMAN PALERMO TRUONG & BECKER LLP

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